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March 1963

PHOTOGRAPHIC INTERPRETATION REPORT

CRUISE-MISSILE LAUNCH SITE NEAR SANTA CRUZ DEL NORTE, CUBA



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NAVY



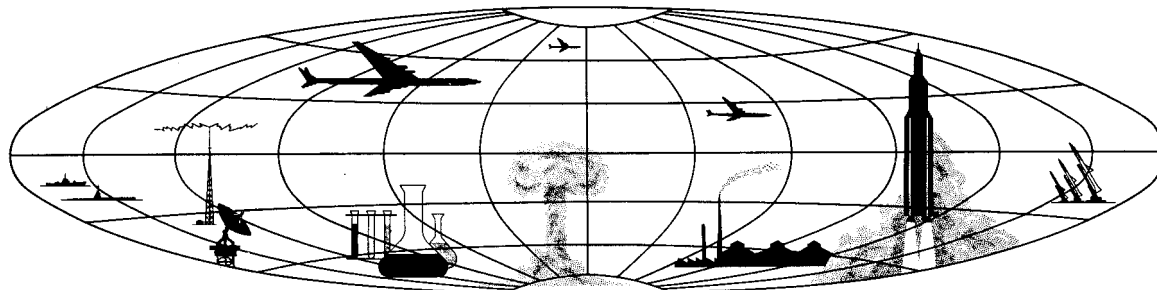
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NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER



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CRUISE-MISSILE LAUNCH SITE NEAR SANTA CRUZ DEL NORTE, CUBA

An operational cruise-missile launch site similar to the one near Banes, Cuba is located at 23-09-00N 81-56-20W (UTM 17QMR039603 on AMS Series E 723, Sheet 3885 III), 1.1 nautical miles (nm) southwest of Santa Cruz del Norte and .7 nm south of the coast (Figure 1). The site--oriented north toward the ocean--is situated on a hill which has a mean elevation of 225 feet. Cruise-missile equipment was first observed at this site on high-altitude photography of [REDACTED]

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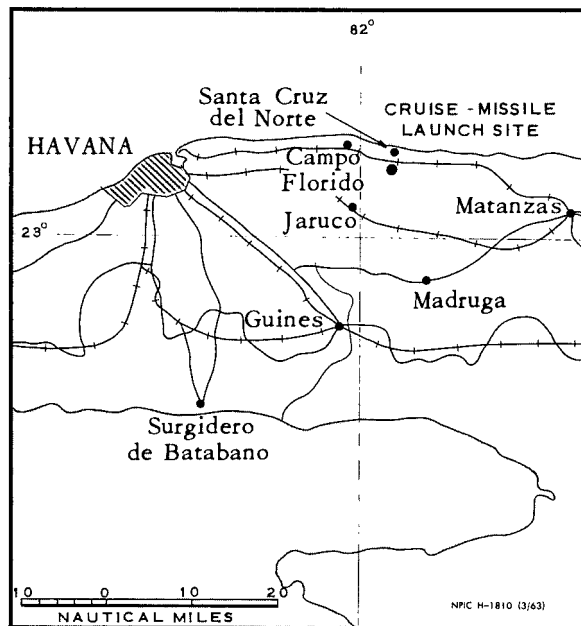


FIGURE 1. LOCATION OF CRUISE-MISSILE LAUNCH SITE NEAR SANTA CRUZ DEL NORTE, CUBA.

The complement of operational equipment is basically the same as that at the Banes site. Specifically, the site near Santa Cruz del Norte contains two revetted launchers with their respective probable control revetments, eight

camouflaged probable missile transporters, two SHEET BEND radars with their associated SQUARE HEAD antennas, an unidentified probable radar mounted on a tall mast, missile crates, numerous buildings, a tent camp, a motor pool, and two open storage areas.

A cruise missile positioned on a probable dolly was identified at this site on high-altitude photography of [REDACTED]. Cruise missiles have also been identified at Banes and the cruise-missile launch site near Campo Florido on high-altitude photography. In dimensions and configuration, these missiles are compatible with the modified KENNEL air-to-surface missile (ASM) observed in a parade in Havana on [REDACTED] (Figure 2). The cruise missiles identified in Cuba on high-altitude photography may be modified KENNEL ASMs which have been adapted to a surface-to-surface capability. The KENNEL measures approximately [REDACTED] in length and has a wing span of 15 feet. The fuselage is tapered and measures approximately [REDACTED]

The cruise-missile launch site near Santa Cruz del Norte is depicted in Figures 3 and 4. A textual description of significant features of the site follows (item numbers are keyed to Figure 3).

Two launch revetments (items 1 and 2). Each revetment measures approximately 55 by 45 feet and is occupied by a canvas-covered mobile launcher oriented on an azimuth of 355-360 degrees. The launchers (Figure 5) are approximately [REDACTED] and have outriggers at about the midpoint on each side. The degree to which the launchers are capable of being

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elevated is not known. The canvas covering over the launchers and deep shadows on available photography preclude a detailed interpretation of their undercarriage. The distance between the launch rails is from [] Alignment chocks for mating the launcher to a transporter are located to the rear of the launcher. The launch revetments are separated center to center by a distance of 275 feet.

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Two probable control revetments (items 3 and 4). These revetments are canvas covered and each contains a probable control van. One revetment (item 3) measures 60 by 15 feet. It is located 225 feet east-southeast of the east launcher and is connected by cable to the east launch revetment. The second revetment (item 4) measures approximately 50 by 15 feet. It

is located 215 feet southwest of the west launcher and is connected by cable to the west launch revetment.

Two SHEET BEND radars (items 5 and 6). One SHEET BEND radar (item 5) is canvas covered. It is connected by cable to the two launch revetments (items 1 and 2), the two probable control revetments (items 3 and 4), and three other revetments (items 8, 10, and 12). The second SHEET BEND radar (item 6) is also canvas covered. It is located north of a probable generator revetment (item 9). This type of radar (Figure 6) has been identified at three other cruise-missile sites in Cuba and at a radar school near Mariel, Cuba. It is mounted near the rear of a box-body trailer which measures approximately []

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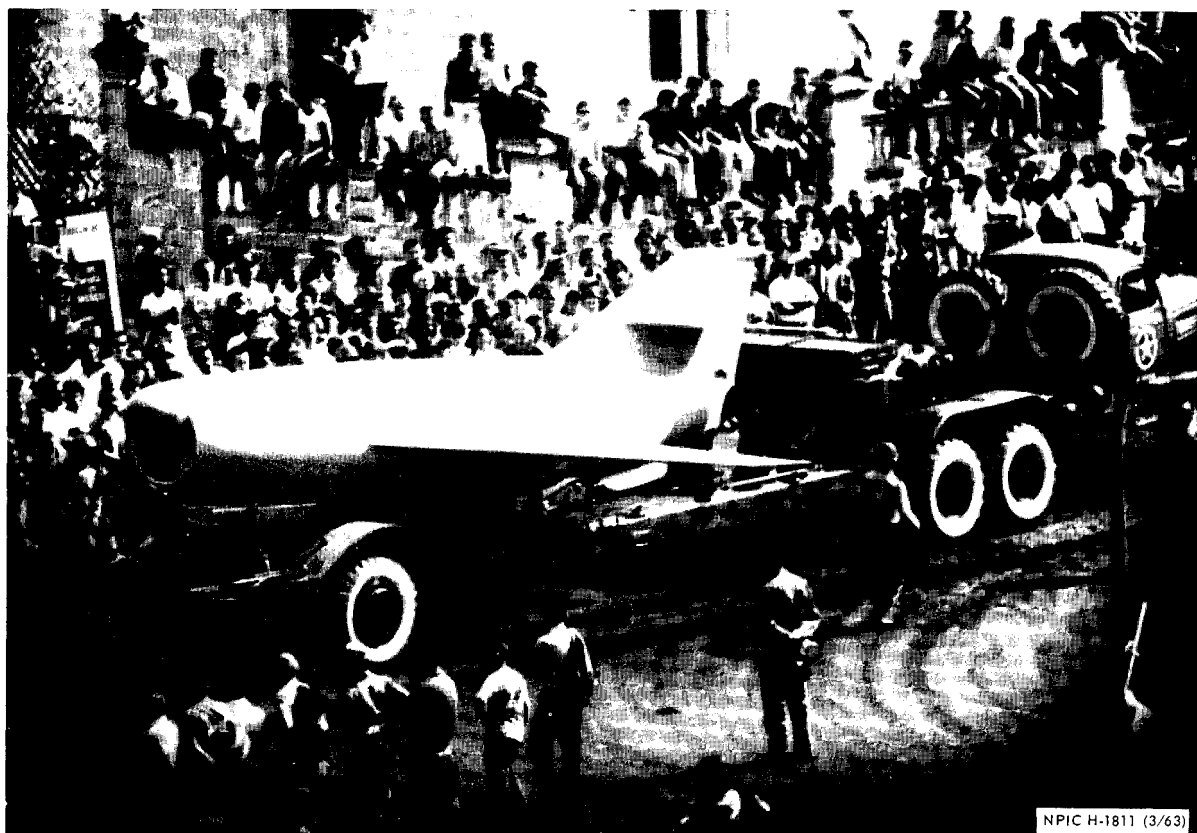


FIGURE 2. MODIFIED KENNEL MISSILE IN HAVANA []

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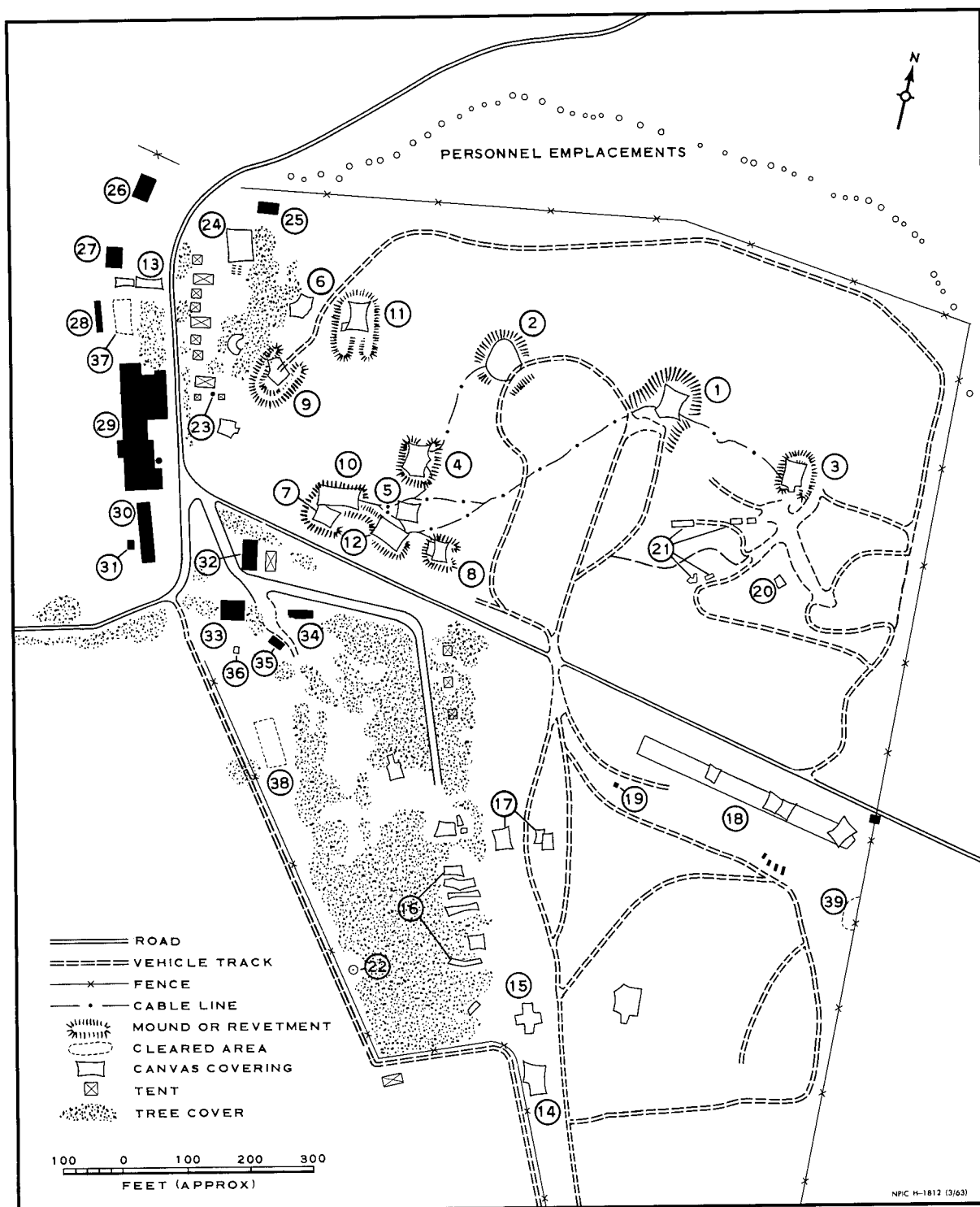


FIGURE 3. LAYOUT OF FACILITIES AT LAUNCH SITE.

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FIGURE 4. CRUISE-MISSILE LAUNCH SITE

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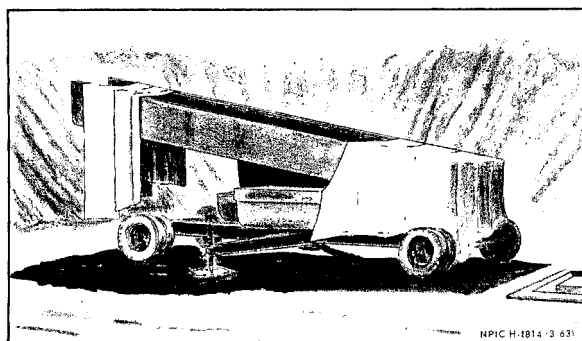


FIGURE 5. SKETCH OF LAUNCHER.

The reflector--a truncated paraboloid measuring []-is mounted on a pedestal and is hinged so that it can be angled downward to a stowed or transport position. Power is supplied from below by means of a feed arm. Mounted on the front end of the trailer is a SQUARE HEAD IFF interrogator which measures approximately [] and appears to telescope.

Probable radar revetment (item 7). This revetment is canvas covered and measures approximately 45 by 15 feet. It is occupied by a tall unidentified probable radar. The revetment is located on the south edge of another revetment (item 10) containing an unidentified piece of equipment.

Two probable generator revetments (items 8 and 9). One revetment (item 8) is canvas covered and measures approximately 30 by 10 feet. It is located southeast of one SHEET BEND radar (item 5). This revetment is occupied by a probable power generator. The second revetment (item 9) is partially canvas covered and measures approximately 60 by 15 feet. It is located southwest of a probable missile-hold revetment (item 11), and is occupied by a probable power generator similar to the one at the first probable generator revetment (item 8). This generator is used in support of the second SHEET BEND radar (item 6).

Possible generator revetment (item 10).

This revetment is canvas covered and measures approximately 60 by 15 feet. It is connected by cable to the two launch revetments (items 1 and 2), one of the two probable control revetments (item 4) and probably the other (item 3), one of the SHEET BEND radars (item 5), one of the probable generator revetments (item 8) and an unidentified revetment (item 12). The possible generator revetment is occupied by an unidentified piece of equipment measuring approximately []. The cable leads to this revetment and its location within the site is similar to corresponding features of the possible power generator at the cruise-missile site near Banes.

Probable missile-hold revetment (item 11).

This revetment is canvas covered and measures approximately 80 by 15 feet. It is located 225 feet west of the west launch revetment (item 2). The revetment is probably occupied and

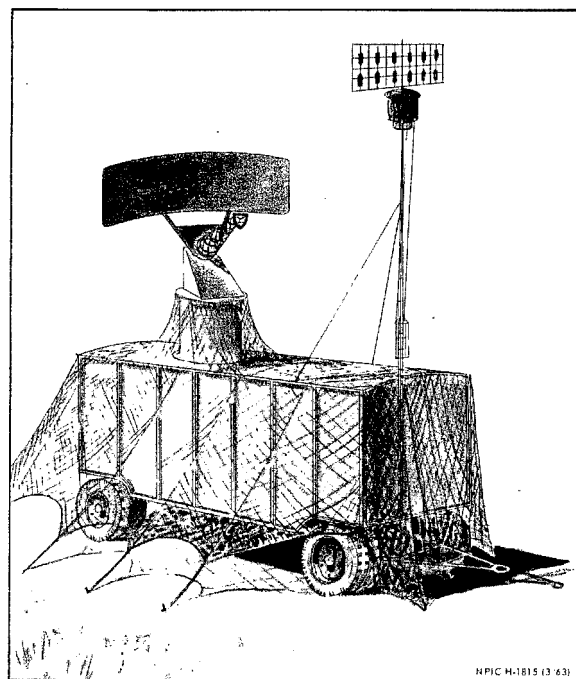


FIGURE 6. SKETCH OF SHEET BEND RADAR WITH ASSOCIATED SQUARE HEAD ANTENNA.

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may function as a hold position for missiles. However, the exact function of the revetted equipment is undetermined.

Unidentified revetment (item 12). This revetment is canvas covered and measures approximately 40 by 10 feet. It is located just south of one SHEET BEND radar (item 5). It is connected by cable to the two launch revetments (items 1 and 2), the two probable control revetments (items 3 and 4), one probable generator revetment (item 8), and the possible generator revetment (item 10). The revetment is probably occupied; however, the exact function of the revetted equipment is undetermined.

Missile shipping crates (item 13). These two shipping crates are canvas covered and measure [REDACTED]. They stand about [REDACTED] high and have flat roofs with beveled edges. One end of the crates has a boxlike appendage of undetermined use. The other end has a door which provides access to the missile. The crates appear to be constructed of wood. A unitized type of construction with external bracing for additional support has been employed (Figure 7).

Open storage area (item 14). On earlier coverage, this open storage area contained six canvas-covered missile shipping crates and unidentified supplies. Two more shipping crates were added in [REDACTED]. There are ten shipping crates in all at the site.

Tent (item 15). This cross-shaped tent, 45 by 40 feet, probably functions as a checkout facility for missiles. A cruise missile on a probable dolly was identified near this tent in [REDACTED].

Probable missile transporters (item 16). Eight probable missile transporters are located in a heavily wooded area under canvas stretched between trees. An uncovered transporter of this type was displayed in the [REDACTED] Havana parade (Figure 2). With this exception,

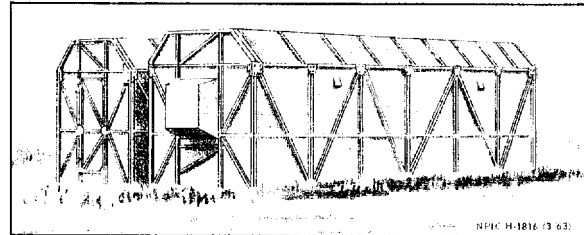


FIGURE 7. SKETCH OF CRUISE-MISSILE SHIPPING CRATE.

the transporters have all been canvas covered on available photography. [REDACTED]

[REDACTED] with the canvas-covered portion--the trailer--measuring [REDACTED]. The trailer is a low-boy type. The missile rides on a double-rail carriage hinged to the trailer just off the trailing edges of the missile wings. The rails mate with the two corresponding rails on the launcher. The tractor is a ZIL-157V.

Unidentified objects (item 17). The two unidentified objects are canvas covered.

Motor pool (item 18). The motor pool contains two bulldozers, two generator trailers, and four canvas-covered pieces of equipment.

Guard post (item 19). The guard post--a single-story structure--measures 5 by 5 feet and has a traffic control gate.

Two AT-S (item 20). These tracked prime movers are probably used to pull the trailer vans.

Unidentified canvas-covered equipment (item 21).

Microwave tower (item 22). The orientation of the twin dishes is undetermined.

Communications facility (item 23). The facility consists of one stick mast with an associated canvas-covered van.

Unidentified revetment (item 24). This revetment is canvas covered and measures approximately 40 by 10 feet. It is located west-northwest of the west launch revetment (item 2). The revetment is probably occupied; however, the exact function of the revetted equipment is undetermined.

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Buildings (items 25-36). With the exception of one building which is still under construction (item 36), the following buildings predate the missile installation but appear to

Item	Roof Configuration	Dimensions (ft)
25	Gable	35 x 25
26	Flat	40 x 30
27	Gable	35 x 25
28	Gable	55 x 10
29	Gable	200 x 70
30	Gable	100 x 20
31	Gable	15 x 10
32	Gable	50 x 25
33	Gable	40 x 35
34	Flat	40 x 20
35	Flat	20 x 10
36	U/C	20 x 10

be integral parts of its support facilities. The buildings--all single story--have either flat or gabled roofs. One (item 29) has an irregular configuration.

Two volleyball courts (items 37 and 38).

Open storage area (item 39). This open storage area contains at least 40 probable 55-gallon drums.

Other equipment observed at the site at various times includes five large tents measuring approximately 30 by 20 feet each, 15 smaller tents ranging in size from 20 by 20

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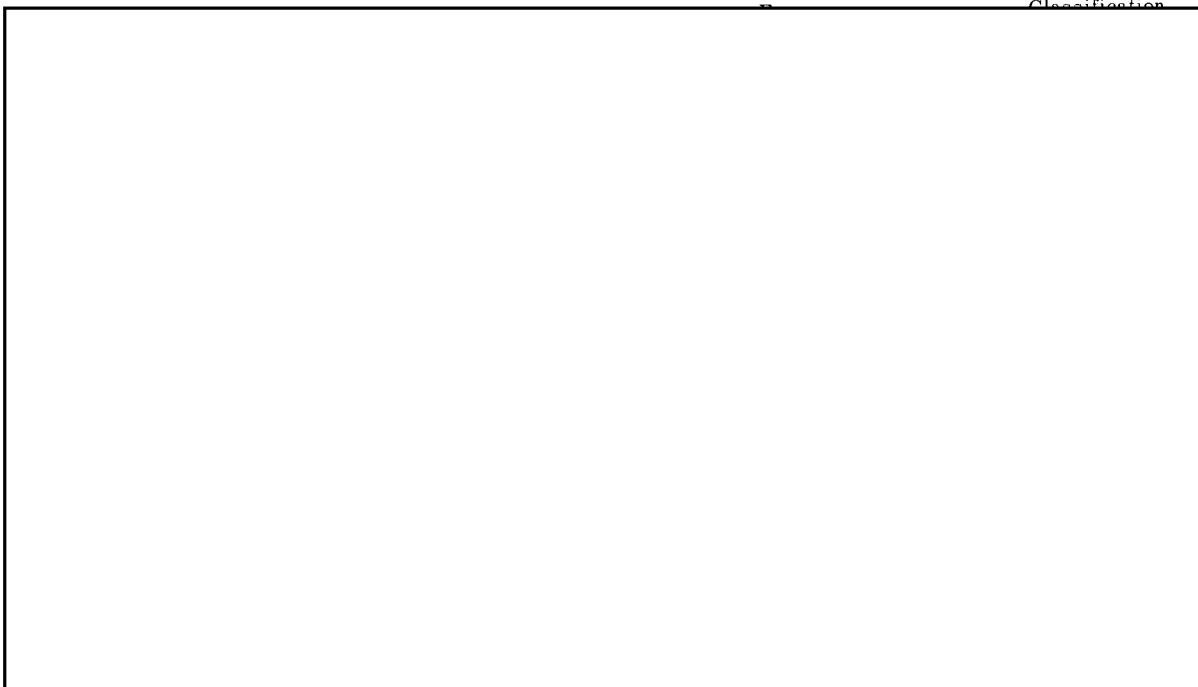
feet, two trucks, one tank truck, one mobile crane, and more than 40 personnel emplacements.

REFERENCES

PHOTOGRAPHY

Aerial:

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REFERENCES (Continued)

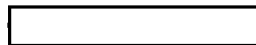
PHOTOGRAPHY (Continued)

Mission	Date	Camera	Frames	Classification
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MAPS OR CHARTS

AMS. Series E 723, Sheet 3885 III, Santa Cruz del Norte, 2d ed, Sep 62, scale 1:50,000



REQUIREMENT

NPIC. PC 173-2

NPIC PROJECT

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